UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,589	04/03/2001	David Andre	20191-701	3725

30554	7590	07/08/2005

SHEMWELL GREGORY & COURTNEY LLP
4880 STEVENS CREEK BOULEVARD
SUITE 201
SAN JOSE, CA 95129

EXAMINER
STERRETT, JONATHAN G

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/825,589	ANDRE ET AL.
	Examiner	Art Unit	
	Jonathan G. Sterrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *21 April 2005*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-44* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-44* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *   c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This **Final Office Action** is responsive to applicant's amendment filed

April 21, 2005. Applicant's amendment of April 21, 2005 amended **Claims 1, 3,**

14 and 29. **Claims 42-44** have been added. Currently **Claims 1-44** are

pending.

Response to Amendment

2.   Applicant's amendments filed on April 21, 2005 with respect to **Claims 1-**

44 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-5, 7-11, 14-20, 22-26, 29-33, 29-33 and 35-39** are rejected

under 35 U.S.C. 103(a) as being unpatentable over **Leggett US 5,185,780** in

view of **Bucci US 6,823,315**.

Regarding **Claim 1**, Leggett teaches:

receiving a plurality of user inputs to a scheduling program including

a number of employee designations that each refer to a unique employee,

column 7 line 27-32, individual agents for each management unit are assigned to the generated tours (shift schedule) for the management unit. This assignment would require multiple unique employee designations being input into the system-see also the table in column 15 line 27-35, the codes in this table correspond specifically to individual agents as to their status.

during the method for generating the schedule, determining an effect on the schedule of an incremental change to the plurality of user inputs, including,

receiving a user input that changes the number of employee designations by indicating at least one changed employee;

column 13 line 3-7, Leggett's algorithm changes the number of employee designations incrementally, to converge on the number of agents required for a particular service level. The algorithm is executed upon command by a user, thus the user input has the effect of changing the number of employee designations.

estimating the effect of the at least one changed employee on effective staffing levels for each of the various tasks; and

column 13 line 3-5, Leggett's method estimates the effect that adding an incremental worker (i.e. changed worker) will have on the staffing levels for each of the calls (i.e. tasks). The algorithm increments and decrements the number of agents to determine the number of agents to achieve a particular staffing level.

generating estimated effective staffing levels for each of the various tasks.

Column 13 line 1-3, the effective staffing levels generated by Leggett's

algorithm determine how long each call will have to wait (i.e. staffing level).

Leggett does not teach:

and a number of skillsets that each correspond to one of the

employee designations; and

Bucci teaches:

and a number of skillsets that each correspond to one of the

employee designations; and

column 4 line 44-46, the skills associated with each employee are used in

the scheduling program to ensure work requirements are met.

Column 8 line 36-37, skill constraints in the algorithm comprise the set of

jobs that an employee can work.

Bucci and Leggett address the problem of performing employee

scheduling that is responsive to a varying demand for workers, thus both Bucci

and Leggett are analogous art.

Bucci teaches that taking worker skill and preference into account results

in higher worker satisfaction (column 3 line 38-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Leggett, regarding providing a scheduling application for use in call centers where the scheduling application is responsive to a varying call demand, to include the step of where each worker is characterized by a number of skillsets, as taught by Bucci, because it would improve worker satisfaction.

Regarding **Claim 2**, Leggett and Bucci teach all the limitations of Claim 1, above, and Leggett also teaches:

wherein the user input that changes the number of employee designations has an effect chosen from a group including adding at least one employee designation and subtracting at least one employee designation.

Column 12 line 45-48, an iteration is performed in the Erlang algorithm where n+1 agents (i.e. adding at least one employee designation) is used to calculate the service level (i.e. staffing level).

Regarding **Claim 3**, Leggett and Bucci teach all the limitations of Claim 1, above, and Leggett also teaches:

determining a number of changes that can be made to the schedule during the scheduling method without simulating a proposed schedule, wherein determining includes comparing a predetermined amount of allowed error and a cumulative error that results from estimating.

Column 12 line 50-54, determining the number of changes to the schedule is done by calculating the impact of adding an additional agent to the schedule and then comparing the impact on service level (i.e allowed error, that is service level is the percent of calls going unanswered for a period of time) to see if the service level desired is lower than a target service level (i.e. cumulative error). Leggett's invention is based on the Erlang calculation rather than a deterministic or stochastic simulation (i.e. monte carlo simulation).

Regarding **Claim 4**, Leggett teaches all the limitations of Claim 3, above, and also teaches:

calculating a total effective work a changed employee will perform; scaling each task by at least one predetermined factor; and adjusting a work distribution for every unique employee other than the changed employee based upon the total effective work the changed employee will perform.

Column 17 line 19-25, a supervisor can calculate the impact of adding or removing one agent to the shift. If an employee is added or subtracted, the supervisor can calculate the impact to service level (i.e. adjust a work distribution) – if one agent is missing then the work queue for all the remaining agents gets adjusted—see also column 17 line 36-39.

Regarding **Claim 5**, Leggett teaches all the limitations of Claim 4, above, and also teaches:

> **distributing the changed employee's effective work across the**
> **plurality of tasks.**

Column 17 line 40-43, the supervisor can modify the schedules of other

agents based on the absence of particular agents, i.e. distribute the changed

employee's effective work across the plurality of tasks. The supervisor is

distributing the calls an absent agent would normally handle to other agents in

the call center.

Regarding **Claim 7**, Leggett teaches all the limitations of Claim 4, above,

and teaches:

> **calculating a total effective work a changed employee will perform**
> column 12 line 40-44, method calculates the amount of calls individual

agents will answer in a period of time (i.e. total effective work).

Leggett does not teach where this calculation is based on:

> **a number of skills of the changed employee;**
>
> **proficiencies of the changed employee;**
>
> **and priorities of the changed employee.**

Bucci teaches:

> **wherein calculating a total effective work a changed employee will**
> **perform comprises applying a function to:**

Column 6 line 40-43, objective function associated with meeting labor requirements calculates the work a changed employee will perform.

a number of skills of the changed employee;

Column 4 line 44, employee skills (i.e. a number of skills) must be taken into account when developing schedules.

proficiencies of the changed employee;

Column 4 line 47, employee seniority (i.e. proficiency) is taken into account when calculating the work an employee will do when a new schedule is generated.

and priorities of the changed employee.

Column 4 line 53, employee preferences (i.e. priorities) must be taken into account when changing the schedule, that is, adding or subtracting employees from the schedule (i.e. changed employee).

Bucci and Leggett address the problem of performing scheduling that is responsive to a varying demand for workers, thus both Bucci and Leggett are analogous art.

Bucci teaches that taking worker skill and preference into account results in higher worker satisfaction (column 3 line 38-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Leggett, regarding providing a scheduling

application for use in call centers, to include the calculation of the amount of work

of a changed employee by using a function applied to skills, proficiencies and

priorities of the changed employee, as taught by Bucci, because it would improve

worker satisfaction.

Regarding **Claim 8**, Leggett teaches all the limitations of Claim 4, above,

and teaches:

wherein adjusting the work distribution for every unique employee

other than the changed employee includes adjusting an effective

contribution to each task worked by one of the other unique employees by

a factor reflecting that a different amount of work will be required for tasks

worked by the changed employee.

Column 17 line 23-26, the team supervisor can determine the effects on

service level – i.e. the amount of calls answered in a period of time, by

determining the number of open agents on the rest of the shift. An employee

who is working (i.e. changed) impacts the amount of work of the rest of the shift

employees by lowering it. In other words the total amount of calls that a shift has

to answer is spread between more and more employees as more employees are

added. So the unique employees have a different amount of work (i.e. fewer

calls to answer) when a changed employee assumes some part of the task load.

Regarding **Claim 9**, Leggett and Bucci teaches all the limitations of Claim

4 above, and Leggett teaches:

wherein the schedule is for staffing a call center, and wherein the plurality of employees comprises a plurality of agents.

Figures 5 & 8 show schedule details for scheduling agents in a call center.

Column 5 line 42-45, force management system for scheduling workforce.

Column 5 line 50-53, system used for call center application.

Regarding **Claim 10**, Leggett and Bucci teaches all the limitations of Claim 6, above, and Leggett teaches:

wherein the schedule is for staffing a call center,

Column 5 line 42-45, force management system for scheduling workforce.

Column 5 line 50-53, system used for call center application.

wherein the plurality of employees comprises a plurality of agents,

Column 6 line 4-6, employees staffing workstations to answer calls.

These employees comprises a plurality of agents – see also Figure 2 for an illustration of the different management groups used to staff a call center.

a task comprises a call queue,

Column 6 line 68-60, a call load (i.e. queue of calls for call center) of calls comes into the call center for a particular shift.

and a subtask comprises a call.

Column 6 line 64, call volumes are comprised of individual calls (i.e. subtask).

Regarding **Claim 11**, Leggett teaches all the limitations of Claim 10, above, and Leggett teaches:

agents are considered of equivalent capability in answering calls and work on the same queue during their shift (column 6 line 18-20).

Leggett does not teach:

wherein the varying skill sets include multiple skills for each agent, and wherein each agent may work on multiple call queues in one time period.

Bucci teaches:

wherein the varying skill sets include multiple skills for each agent, and wherein each agent may work on multiple call queues in one time period.

Column 8 line 34-37, each employee (i.e. agent) has a set of skills (i.e. multiple skills) that enable them to work on a particular set of jobs (i.e. multiple call queues) in a week (i.e. one time period).

Bucci and Leggett address the problem of performing scheduling that is responsive to a varying demand for workers, thus both Bucci and Leggett are analogous art.

Bucci teaches that taking worker skill and preference into account results in higher worker satisfaction (column 3 line 38-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Leggett, regarding providing a scheduling application for use in call centers, to include where workers can work on multiple queues using multiple skillsets in a given time period, as taught by Bucci, because it would improve worker satisfaction.

Claims 17-20, 22-26, 29-33 and 35-39 recite limitations already addressed by the rejection of **Claims 1-5 and 7-11** above, therefore they are rejected under the same rationale.

Regarding **Claim 14**, all the limitations have been addressed by Leggett and Bucci in Claim 1 above, and Leggett teaches:

at least one server comprising at least one storage device;

column 6 line 3-6, central computer linked to workstations is a server, since it contains the operating program accessed by the workstations.

at least one client processor coupled to the server through a network,

column 6 line 3-4, workstations (i.e. client processor) is coupled to the server through a network—see figure 1 #26a.

wherein the client processor is coupled to a plurality of storage devices, including a storage device that stores instructions that, when

executed, cause the at least one client processor receive a plurality of user inputs into a scheduling program.

Figure 1 #16 and #18 are the MIS database and FMS database which store instructions that cause the workstations (#24), to receive inputs into a scheduling program. Figure 5 & 8 illustrate two screens in the program for inputting user inputs in the scheduling program.

Regarding **Claim 15**, Leggett teaches:

wherein the storage device that stores the instructions is accessed by at least one storage device of the server.

Column 6 line 33-37, supervisory workstation accesses the instructions stored by the server for running the scheduling program –see also Figure 10#124 and the workstations in Figure 1 (e.g.#24) which access the instructions stored in at least one storage device, to produce the input screens of Figure 5 & 8.

Regarding **Claim 16**, Leggett teaches:

wherein the storage device that stores the instructions is the at least one storage device of the server.

Figure 4 #50, administration of the central computer (i.e. server) stores the instructions for running the scheduling program – see also column 6 line 34-35, the 3B2/1000 contains storage area for storing instructions.

5.   **Claims 12, 13, 27, 28, 40 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Leggett US 5,185,780** in view of **Bucci US 6,823,315** and further in view of **White**.

White, Ron, "How Computers Work – Millennium Edition", 1999, Macmillan Computer Publishing, p131.

Regarding **Claim 12**, Leggett and Bucci teaches all the limitations of Claim 1, above, but do not teach:

dividing the method of Claim 1 such that the method is performed on multiple parallel processors comprising dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor.

White teaches:

dividing the method of Claim 1 such that the method is performed on multiple parallel processors comprising dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor.

Page 131 paragraph 3 line 3-7, pieces of a calculation can be divided up so that different processors (i.e. multiple parallel processors) can process parts of a calculation, including processing a schedule determination where different time intervals of the schedule are processed by different processors.

Leggett, Bucci and White's teachings all deal with the use of computers to solve problems and so thus all are analogous art.

White teaches that the use of multiple parallel processors is the cheapest, most cost effective way to increase computing power (Page 131 paragraph 3 line 3-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the collective teachings of Leggett and Bucci, regarding scheduling workforces according to a varying demand load, to include the step of processing various parts of the schedule on different processors, as taught by White, because it would increase the computing power required to process the schedule in the most cost effective manner.

Regarding **Claim 13**, Leggett and Bucci teaches all the limitations of Claim 1, above, but do not teach:

dividing the method such that the method is performed on multiple parallel processors comprising, performing the schedule process on one processor, and performing simulation on multiple different processors.

White teaches:

dividing the method such that the method is performed on multiple parallel processors comprising, performing the schedule process on one processor, and performing simulation on multiple different processors.

Page 131 paragraph 3 line 3-7, pieces of a calculation can be divided up so that different processors (i.e. multiple parallel processors) can process parts of a calculation, including processing a schedule determination on one processor and simulation of the schedule on multiple different processors.

Leggett, Bucci and White's teachings all deal with the use of computers to solve problems and so thus all are analogous art.

White teaches that the use of multiple parallel processors is the cheapest, most cost effective way to increase computing power (Page 131 paragraph 3 line 3-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the collective teachings of Leggett and Bucci, regarding scheduling workforces according to a varying demand load, to include the step of processing the schedule on one processor and performing simulations on other processors, as taught by White, because it would increase the computing power required to process the schedule and simulations in the most cost effective manner.

Claims 27, 28, 40 and 41 recite limitations already addressed by the rejection of **Claims 12 and 13** above, therefore they are rejected under the same rationale.

6.   **Claims 6, 21 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Leggett US 5,185,780** in view of **Bucci US 6,823,315** and further in view of **Leamon**.

Leamon, Paul, "Workforce Management with Skills-Based Call Routing: The New Challenge", March 1999, Call Center Solutions, pp.88-93.

Regarding **Claim 6**, Leggett teaches all the limitations of Claim 4, above, and also teaches:

wherein the at least one predetermined factor includes a measure of average time to handle a subtask divided by a number of subtasks per time interval,

column 7 line 52-55, AHT(average handling time) is the average time to handle a call (i.e. subtask). Call volume is the number of calls (i.e. subtasks) per a time interval. A single agent could handle 3 calls an hour if the AHT is 20 minutes. 600 calls in an hour would require 200 agents, so the predetermined factor as taught by Leggett would be 200 additional agents. This meets the claim limitation above because 1 / (3 calls per hour per agent) divided by 600 calls / hour = 200 agents.

Leggett does not teach that one of the factors used to scale how much

work a changed employee will perform is based on:

a measure of how much work remains in a task based

upon results of a previous simulation.

Leamon teaches:

a measure of how much work remains in a task based

upon results of a previous simulation.

Page 93 paragraph 2 line 8-11, the inclusion of simulation input into a

scheduling program allows the analysis of changes to the schedule (i.e. scaling

the total effective work a changed employee will perform by a predetermined

factor)—this would include determining how much work remains in a task based

upon results of a previous simulation. The simulation would indicate the impact

of adding or subtracting unique employees to the schedule, including determining

a measure of how much work remains in a task. This impact would be used to

refine the schedule, since Leamon teaches the integration of a simulator into the

scheduling program.

Leamon, Leggett and Bucci all deal with scheduling workers in an

environment of varying demand, thus all are analogous art.

Leamon teaches that the inclusion of a simulator into a scheduling program automatically creates accurate forecasts and effective working schedules.

It would have been obvious to one of ordinary skill in the art to modify the collective teachings of Leggett and Bucci, regarding scheduling employees with multiple skills in a work environment, with the step of using simulation as input into a scheduling program to determine the impact of adding or subtracting employees, as taught by Leamon, because it would automatically create accurate forecasts and produce effective working schedules.

Claims 21 and 34 recite limitations already addressed by the rejection of **Claim 6** above, therefore they are rejected under the same rationale.

7.   **Claims 42-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blue Pumpkin's PrimeTime Call Center software product **(Blue Pumpkin)** as disclosed in the following documents:

TMC Labs, "PrimeTime Enterprise Receives Editors' Choice", July 1999, Call Center Solutions, pp.1-6,

http://archive.bibalex.org/web/20000229044631/blue-

pumpkin.com/reviews/ccs0799_eds_choice.html, hereafter referred to as

Reference U1.

Monegain, Bernie, "Avis Takes Charge of Airport Staffing", March 2000,

Call Center News, pp.1-2, http://archive.bibalex.org/web/20000520211508/blue-

pumpkin.com/reviews/ccnews0300.html, hereafter referred to as **Reference V1**.

Regarding **Claim 42**, Leggett teaches:

initiating an automatic scheduling process that receives employee

data as an input;

Reference U1 page 3 paragraph 4 line 1-4, employee data received into

software as part of scheduling process.

Reference V1 page 1 paragraph 2 line 1-4, software used in call center

scheduling automates the scheduling process of employees.

determining whether to simulate a proposed schedule,

Reference U1 page 4 paragraph 5 line 1-3, call center manager

determines whether to forecast (i.e. simulate) or schedule as part of managing a

campaign.

if it is determined not to simulate the proposed schedule, continuing

with the method including evaluating and outputting the proposed

schedule;

Reference U1 page 5 paragraph 5 line 1-3 & 7-11, Once the data is set

up, having made adjustments as a result of a forecast or using the employee

data as entered, the software automatically generates a schedule which is output

by accessing an employee's calendar tab –see page 3 paragraph 5 line 3-5. The

system highlights if there is a problem with the schedule (i.e. evaluates it) prior to

providing the schedule to employees and managers over the network (i.e.

outputting the proposed schedule).

determining whether a change has been made to the employee data;

if a change has been made to the employee data, calculating an effective

change to staffing levels; and

Reference U1 page 5 paragraph 1 line 3-6, the scale button in the

software allows a manager to determine if employee performance is different

than what was entered into the system, including accounting for unanticipated

absenteeism (i.e. changes to employee data). This feature then allows the

software to calculate an adjustment to the schedule (i.e. staffing levels) to

account for the difference in employee data.

continuing with the method including evaluating and outputting the

proposed schedule.

Reference U1 page 4 paragraph 5 line 1-3, The campaign mode allows

the manager to forecast and schedule on a weekly basis. This scheduling

includes forecasting (i.e. simulating) as per above and determining if there has

been changes in employee data as per above. This prework can be done to

ensure the scheduling process has the most accurate data prior to generating an

actual schedule.

Although Blue Pumpkin teaches forecasting as per above, it does not teach:

including measuring a cumulative error of using an estimation function from results of the simulation, and a predetermined allowed error;

Official Notice is taken it is old and well known in the art of forecasting for the technique of linear regression to be used. Linear regression provides an equation that allows estimates to be provided from the equation (i.e. estimation function). The standard error from this equation, known as the R^2, provides a measure of fit for the particular equation (i.e. cumulative error). The R^2 varies from 0 (no correlation) to 1 (perfect correlation) and provides a measure of the forecasted data set as to the amount of error likely to be incurred as a result of using the equation to forecast. Comparing the R^2 for a particular forecast equation to a predetermined R^2 (i.e. predetermined allowed error) allows the user to determine whether the regression is valid. In some cases an R^2 of 0.3 is considered acceptable, that is the equation fits 30% of the data. In other cases an R^2 of a higher number is used to determine if the regression is significant. It these cases an R^2 of 60-70% may be required for the regression to be considered statistically valid to be used in a forecast. Other measures of regression include the use of the F-statistic, which is compared to a predetermined F-statistic to determine if the regression is statistically viable. The use of regression analysis as a forecasting technique is old and well known in the art and fully meets the claim limitations.

Regression analysis is used because it provides a way to mathematically predict a future outcome using historical data including predicting how accurate the forecast will be.

Both Blue Pumpkin and the use of regression analysis address using forecasts to predict future events, and so both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Blue Pumpkin, regarding using software to forecast and manage schedules in call centers, to include the step of including measuring a cumulative error of using an estimation function from results of the simulation, and a predetermined allowed error, as taught by the well known technique of regression analysis, because it would provide a means to accurately forecast future outcomes using historical data.

Regarding **Claim 43**, Blue Pumpkin teaches all the limitations of Claim 42 above, and also teaches:

wherein skill sets comprise abilities to service client call queues, and

Reference U1 page 3 paragraph 4 line 11-15, skill based scheduling comprises abilities to service client call queues.

wherein calculating the effective change to staffing levels comprises:

determining a total effective work a changed employee will perform,

Reference U1 page 5 paragraph 1 line 6-12, the shrinkage button allows to determine the impact on the amount of calls (i.e. total effective work) from adding or subtracting a single employee from the total number of employees staffed.

wherein a changed employer is selected from a group comprising an added employee and a removed employee; and

Reference U1 page 5 paragraph 1 line 6-12, the shrinkage button allows the determination of adding or removing an employee. The objective of this button is to determine the impact of adding or subtracting employees to the call center shift.

scaling each of a plurality of call queues to be staffed in accordance with the total effective work of the changed employee.

Reference U1 page 5 paragraph 1 line 3-7, the scale button allows the incoming call percentage to be scaled up or down in accordance with the number of calls (i.e. total effective work) that a changed employee will handle.

Regarding **Claim 44**, Blue Pumpkin teaches all the limitations of Claim 43 above, and also teaches:

distributing the changed employee's effective work across the plurality of call queues;

Reference U1 page 4 paragraph 6 line 10-12, agents can be on more than one campaign (i.e. call queue) based on their skills. This assignment would distribute their effective work across more than one call queue.

and adjusting other employees effective work in accordance with the

total effective work of the changed employee.

Reference U1 page 4 paragraph 7 line 1-5, scheduling determines how

many agents are schedule in total to ensure that average handling time meets

targeted service levels given the call volume. Adding an employee adjusts the

other employee's effective work in accordance with the amount of calls handled

by the added employee (i.e. changed employee).

Response to Arguments

8.   Applicant's arguments filed on April 21, 2005 have been considered but

are moot in view of the new ground(s) of rejection.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection

presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

Applicant is reminded of the extension of time policy as set forth in 37 CFR

1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

US 6,058,370 by Church discloses a means to forecast ambulance

demand.

"Maxima Advantage", Jan 2000, Call Center CRM Solutions, 18, 7;

ABI/Inform global, p. 94.

Business Wire, "Blue Pumpkin Software Launches Expansion into

Canada", Jan 3, 2000, New York, p.1. ProQuest Document ID 47601849.

Cleveland, Brad, "How Do You Calculate Staff", Teleprofessional, Aug

1999, 12, 8; ProQuest Telecommunications, p. 98.

Muraskin, Ellen, "Outbound unbound", Feb 2000, Computer Telephony, 8,

2; ProQuest Computing, p.93.

Byrnes, Hellen, "Merging Priorities", Jan 2000, Credit Union Management, 23, 1; ABI/INFORM Global, p.46.

Matan, Ofer; Nourbakhsh, Illah; "Playing the Numbers: Using ACD Statistics for Workforce Management", March 1998, Telemarketing and Call Center Solutions; 16, 9; ABI/INFORM Global, p.118.

Heijenrath, Joop; Sheahan, Marie; "Managing Multilingual IT Support Centers in Europe", Sept 1998, Call Center Solutions, 17, 3, ABI/INFORM Global, p.88.

Lounsbury, Erik, "A Panoramic View of What's High-Tech in Florida", Call Center CRM Solutions, Apr 2000, 18, 10; ABI/INFORM Global, p.92.

Business Wire, "Blue Pumpkin Software Announces First Comprehensive Scheduling Solution For Global Contact Centers With Complex Work Rules", Jan 25, 2000, p.1.

Vartabedian, Matthew, "Well, That's a Switch", June 1998, Telemarketing and Call Center Solutions, 16, 12; ABI/INFORM Global, p.48.

Bayless, Jeanne, "The most influential CTI Companies", Nov 1995, Telemarketing, v14n5, pp.ss6-ss39, Dialog 01136674 97-86068.

Vartabedian, Matthew, "A little of this, and a pinch of that", October 1998, Call Center Solutions, v17n4, pp.46-50, Dialog 07817222 04-68213.

"Performance Measurement & Small to Mid-sized Call Center Solutions", Mar 1999, Call Center Solutions, v17n9, p22, Dialog 01819003 04-69994.

Marlin, Steven, "'Intelligent' telecenters", June 1999, Bank Systems & Technology, v36n6, pp.28-34, Dialog 01833926 04-84917.

Davis, Scott, "Close calls", Oct 1997, Communications News, v34n10, pp.60, Dialog 01519006 01-69994.

Blue-Pumpkin webpages "PrimeTime Enterprise, Workforce management scheduling for quality customer service", March 7, 2000.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is (571) 272-6881. The examiner can normally be reached on Monday-Friday, 8:00AM - 6:00PM.
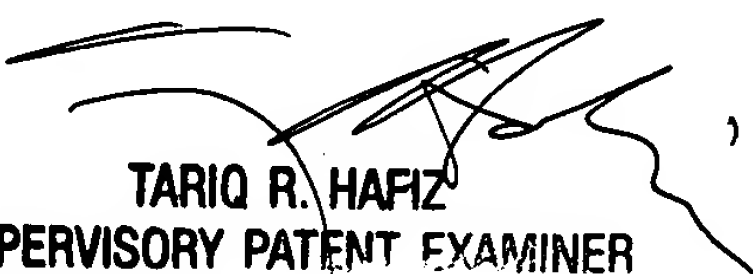
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax

phone number for the organization where this application or proceeding is

assigned is 703-872-9306.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

JGS
6/15/2005

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNO!